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Chapter 1

Need for and Purpose of Proposed Action

1.1 INTRODUCTION

The Federal Highway Administration (FHWA), the Texas Department of Transportation (TxDOT), and the Alamo Regional Mobility Authority (Alamo RMA) are proposing improvements to an approximately eight-mile stretch of United States (US) Highway 281 extending from the south at Loop 1604 within the city of San Antonio, to the north at Borgfeld Drive in northern Bexar County, Texas (**Figure 1-1**). The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT. The four direct connector ramps that comprise the northern half of the US 281 interchange with Loop 1604 are included in the proposed improvements.

The proposed action has the logical termini of Loop 1604 on the south and Borgfeld Drive on the north, which provide rational end points for transportation improvements and review of environmental impacts. North of Borgfeld Drive, the next two major intersections with US 281 – Farm–to-Market (FM) 1863 and State Highway (SH) 46, respectively – are each already grade-separated interchanges. South of Borgfeld Drive, grade-separated interchanges occur at Sonterra Boulevard and Loop 1604 and continue south as part of the existing US 281 freeway. From Borgfeld Drive south to Redland Road, intersections are currently controlled by traffic signals and signs, a condition that for many years has given rise to calls for US 281 to be improved with overpasses or grade-separated interchanges, along with direct ramp connections between US 281 and Loop 1604.

Borgfeld Drive and Loop 1604 also provide rational end points for a review of the environmental impacts over a broad geographic area. The US 281 project corridor crosses 13 streams and traverses both the Edwards and Trinity Aquifers. The study area for review of potential direct, indirect and cumulative environmental impacts encompasses approximately 560 square miles in northern Bexar, western Comal and small parts of Kendall and Blanco counties (see **Figure 4-1**).

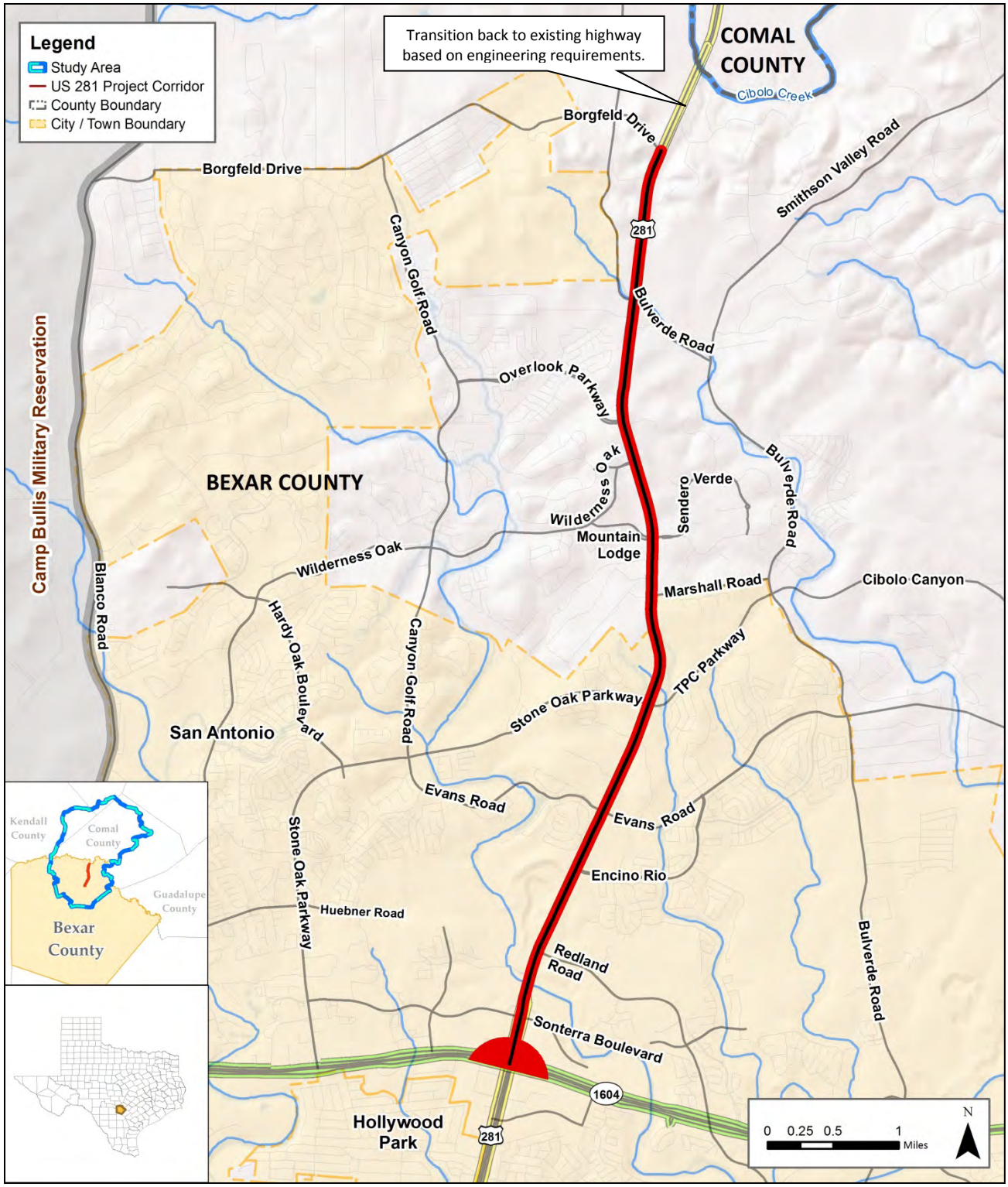
The proposed action has independent utility without the benefits of the implementation of other transportation improvements. The project improvements would function as a usable roadway, would not require implementation of any other projects to operate, and would not restrict consideration of alternatives for other foreseeable transportation improvements.

The need for improvements to the US 281 project corridor arises from historic and continuing trends in population and employment growth along the corridor and within the surrounding areas. This growth generates increasing amounts of vehicle travel, which in turn impedes the function of US 281 to provide regional mobility and local access, leading to lengthy travel delays and a high rate of vehicle crashes. These transportation issues negatively affect the quality of life for communities surrounding the US 281 project corridor. The purpose of the US 281 Corridor Project is to improve mobility and accessibility, improve safety, and enhance community quality of life.

The Alamo Area Metropolitan Planning Organization, formerly the San Antonio-Bexar County Metropolitan (MPO) is responsible for producing the region's long-range metropolitan transportation plan (MTP). The proposed improvements to US 281 from Loop 1604 to Borgfeld Drive was listed in MPO's previous MTP, *Mobility 2035*, which was adopted on December 7, 2009 and updated on June 18, 2014. The US 281 Corridor Project is an integral part of the current MTP *Mobility 2040*, which was adopted December 8, 2014. The project's interim improvements are included in *Mobility 2040* in two separate entries as part of the MPO's Fiscal Year (FY) 2015-2018 Transportation Improvement Program (TIP). Control section job (CSJ) 0253-04-146 is from Loop 1604 to Stone Oak Parkway and would expand US 281 to a six-lane expressway (two non-toll expressway lanes with an auxiliary lane plus one managed lane in each direction) and non-toll northern direct connectors at Loop 1604. From Loop 1604 to approximately Stone Oak Parkway, the expressway lanes would be situated between three partial access-controlled outer lanes or frontage roads, in each direction. CSJ 0253-04-138 is from Stone Oak Parkway to the Bexar/Comal County line and would provide an interim expansion of US 281 to a four-lane expressway (two managed lanes in each direction). Two non-toll outer lanes in each direction would be provided outside the expressway lanes, which would function as US 281. Together, these two segments of the US 281 Corridor Project are estimated in the TIP to cost $458,000,000. The ultimate configuration between Stone Oak Parkway and the Bexar/Comal County line would be a six-lane expressway (three managed lanes in each direction) and two non-toll outer lanes in each direction. CSJ 0253-04-902 includes the addition of one managed lane in each direction between Stone Oak Parkway and the Bexar/Comal County line. It is included in *Mobility 2040* with FY 2030 funding at a cost of $63,500,000.

The TIP was approved by the MPO Transportation Policy Board at their meeting on April 28, 2014 (AAMPO 2014). The FY 2015-2018 TIP was then incorporated into the Statewide TIP (STIP), which was approved by FHWA on July 24, 2014. The FY 2015-2018 TIP allocates $86 million in Category 2 (Texas Mobility Fund) funding to this project in FY 2015 through 2016 and $58 million between FY 2016 and 2020. Other sources of funding for this project include $6 million in Proposition 12 funds, $48 million in Advanced Transportation District (ATD) funds, and $26 million in City of San Antonio bond sale proceeds, and other local contributions financed by toll revenues. Additional non-toll sources of funding may be allocated to US 281 improvements by the MPO's governing body, the Transportation Policy Board, in future *Mobility 2040* updates, amendments or future MTPs. The project's interim construction could begin in 2016 and would take four years to complete. The ultimate build out could begin in 2030.

Figure 1-1: US 281 project corridor



Source: US 281 EIS Team, 2011

1.2 PROJECT HISTORY

Several attempts to improve the US 281 project corridor have been made by FHWA and TxDOT over the last 25 years (**Figure 1-2**). Project planning, environmental studies, engineering and public involvement activities have been conducted almost continuously since the mid-1980s in support of numerous Categorical Exclusions (CE) and Environmental Assessments (EA) under the National Environmental Policy Act (NEPA). However, the only additional capacity provided as a result of these efforts was in 1990 with the construction of improvements between Bitters Road and Sonterra Boulevard, which encompassed the southern end of the US 281 project corridor. That project was part of the NEPA action taken on August 8, 1984 when FHWA issued a Finding of No Significant Impact (FONSI) for an EA that addressed a proposal to add additional travel lanes along US 281 from Bitters Road (3.1 miles south of Loop 1604) to near Evans Road (2.5 miles north of Loop 1604). FHWA reevaluated portions of this EA in 2000 and 2005, both times determining that no significant impacts would occur from the proposed improvements.

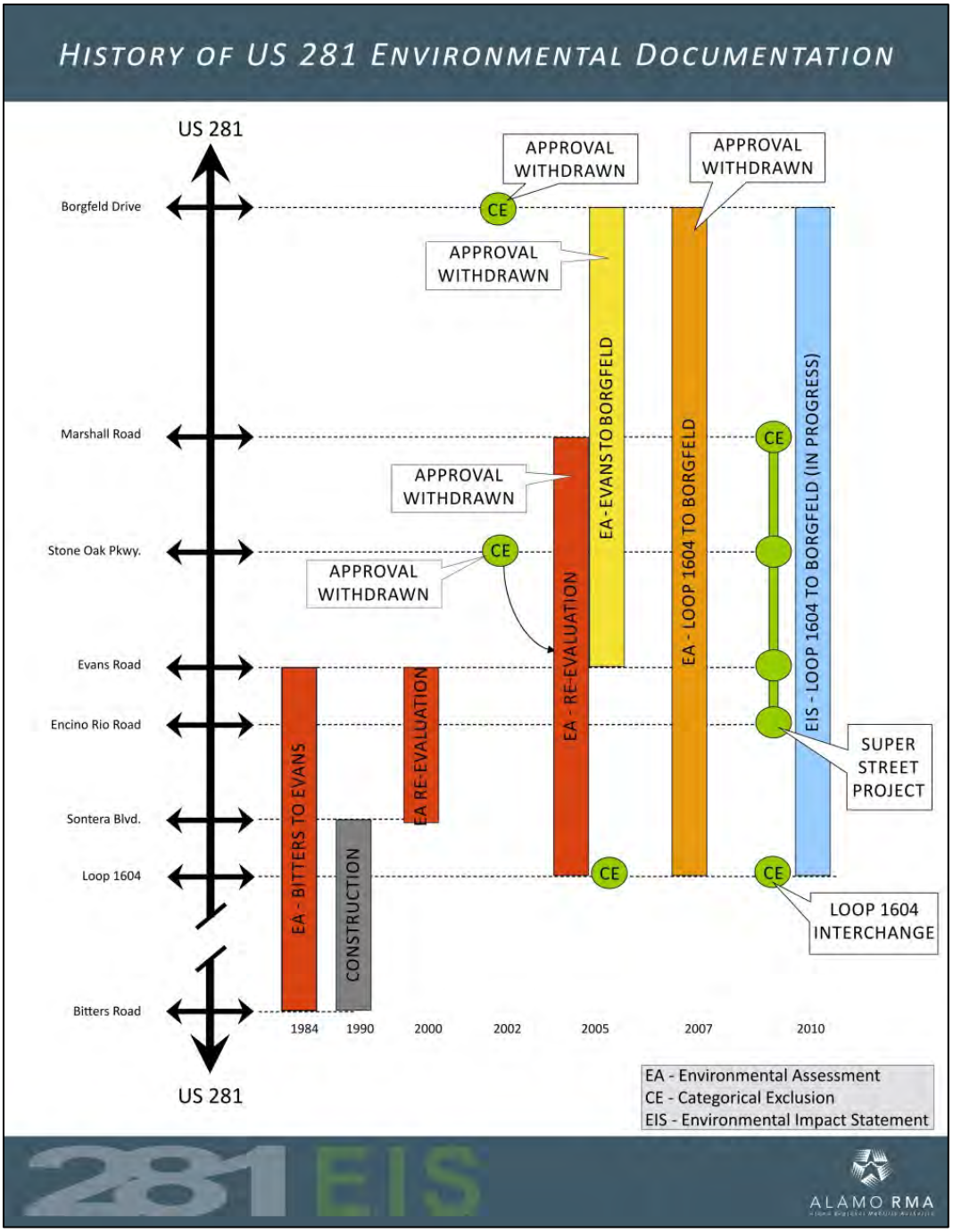
FHWA also issued a FONSI and approved three CEs for improvements to the interchanges with US 281 at Loop 1604, Stone Oak Parkway and Borgfeld Drive. In September 2005, following a reevaluation, TxDOT requested construction bids for US 281 improvements between Loop 1604 and Marshall Road that included improvements to Stone Oak Parkway.

Currently, US 281 is a four-to-six-lane divided roadway within the project limits. Northbound and southbound frontage roads are located at the southern end of the US 281 project corridor, from Loop 1604 to 0.2 mile north of Sonterra Boulevard. Two transportation improvement projects were recently approved in the vicinity of the US 281 project corridor: the US 281 Super Street and the southern half of the US 281 interchange with Loop 1604. These projects, briefly described below, are primarily intended to improve roadway operations and safety.

1.2.1 US 281 Super Street

The Alamo RMA received approval of a CE from FHWA in September, 2009 to construct operational improvements on US 281 at Encino Rio, Evans Road, Stone Oak Parkway and Marshall Road, commonly referred to as the US 281 Super Street. The 3.1-mile project, completed in October 2010, is designed to temporarily improve traffic flow and improve safety for motorists (Alamo RMA 2009). The Super Street improvements help reduce near-term peak hour congestion but would not satisfy 2035 forecasted travel demand.

Figure 1-2: History of US 281 NEPA documentation

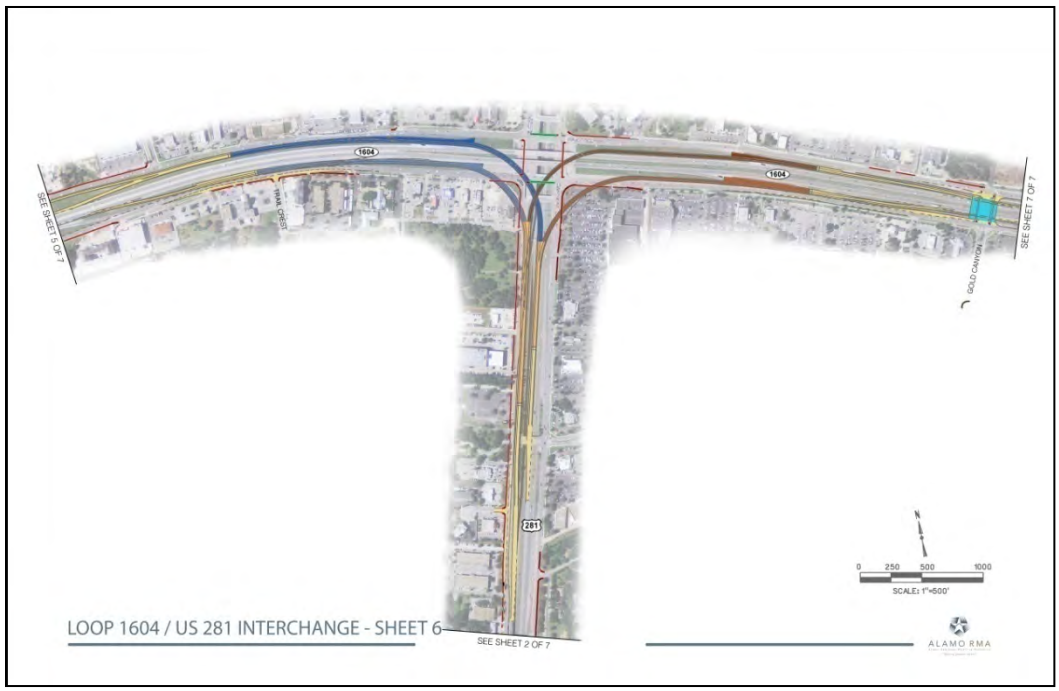


Source: Alamo RMA, TxDOT, US 281 EIS Team, 2010

1.2.2 US 281/Loop 1604 Interchange

The Alamo RMA received approval of a CE from FHWA in February, 2010 to construct improvements to the southern half of the US 281 interchange with Loop 1604. This project involves the construction of four non-toll direct connector ramps linking US 281 and Loop 1604 (**Figure 1-3**). It also includes frontage road, bicycle and pedestrian improvements.

Figure 1-3: US 281/Loop 1604 interchange improvements



Source: Alamo RMA, 2010

1.3 NEED FOR THE PROPOSED ACTION

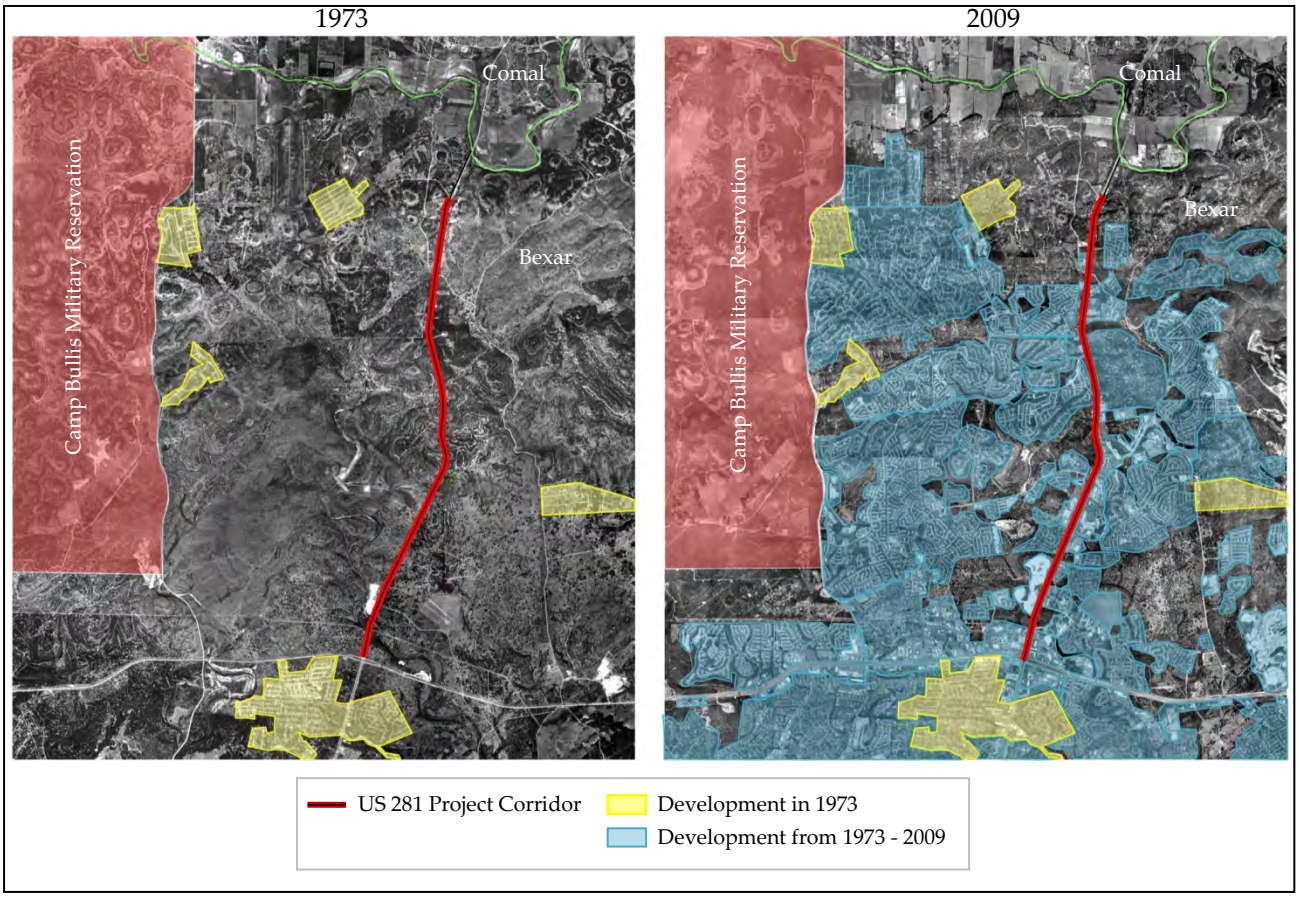
The US 281 Corridor Project needs to address growth, functionality, safety, and community quality of life. Factors contributing to the need for improvements are briefly summarized below and documented more fully in the sections that follow.

- The number of people living and working within the northern Bexar County and southern Comal County Census Tracts adjacent to the US 281 project corridor has increased dramatically since 1980. Population and employment is expected to continue growing over the next 25 years.
- The US 281 project corridor has had only minor capacity improvements since the mid-1970's. As a result, travel demand exceeds capacity during the morning southbound and evening northbound peak periods along the most heavily travelled section of the corridor, between Loop 1604 and Marshall Road. Traffic volumes are expected to increase substantially over the next 25 years.
- The high number of intersecting cross-streets and driveways that provide local access along the US 281 project corridor creates many conflict points that contribute to traffic safety and congestion problems.
- Crash rates on the US 281 project corridor are higher than the statewide rates for similar types of roadways.
- Failure to address the US 281 project corridor's transportation problems has contributed to declining quality of life for nearby communities. Excessive traffic noise is unabated; the corridor has become visually and aesthetically unappealing; and there is a lack of transportation choices due to the absence of public transportation service and facilities for walking and bicycling.

1.3.1 Growth

Prior to the early 1980's land around the US 281 project corridor was largely rural and undeveloped. Since that time, the area has become developed with single- and multi-family subdivisions, and commercial and retail businesses now lining the US 281 project corridor on both sides. The aerial photographs in **Figure 1-4** show the intensifying spread of land development to the east and west of the US 281 project corridor between 1973 and 2009.

Figure 1-4: Aerial view of corridor development from 1973 through 2009



Source: Texas Natural Resources Information System 1973, City of San Antonio 2009a, US 281 EIS Team, 2010

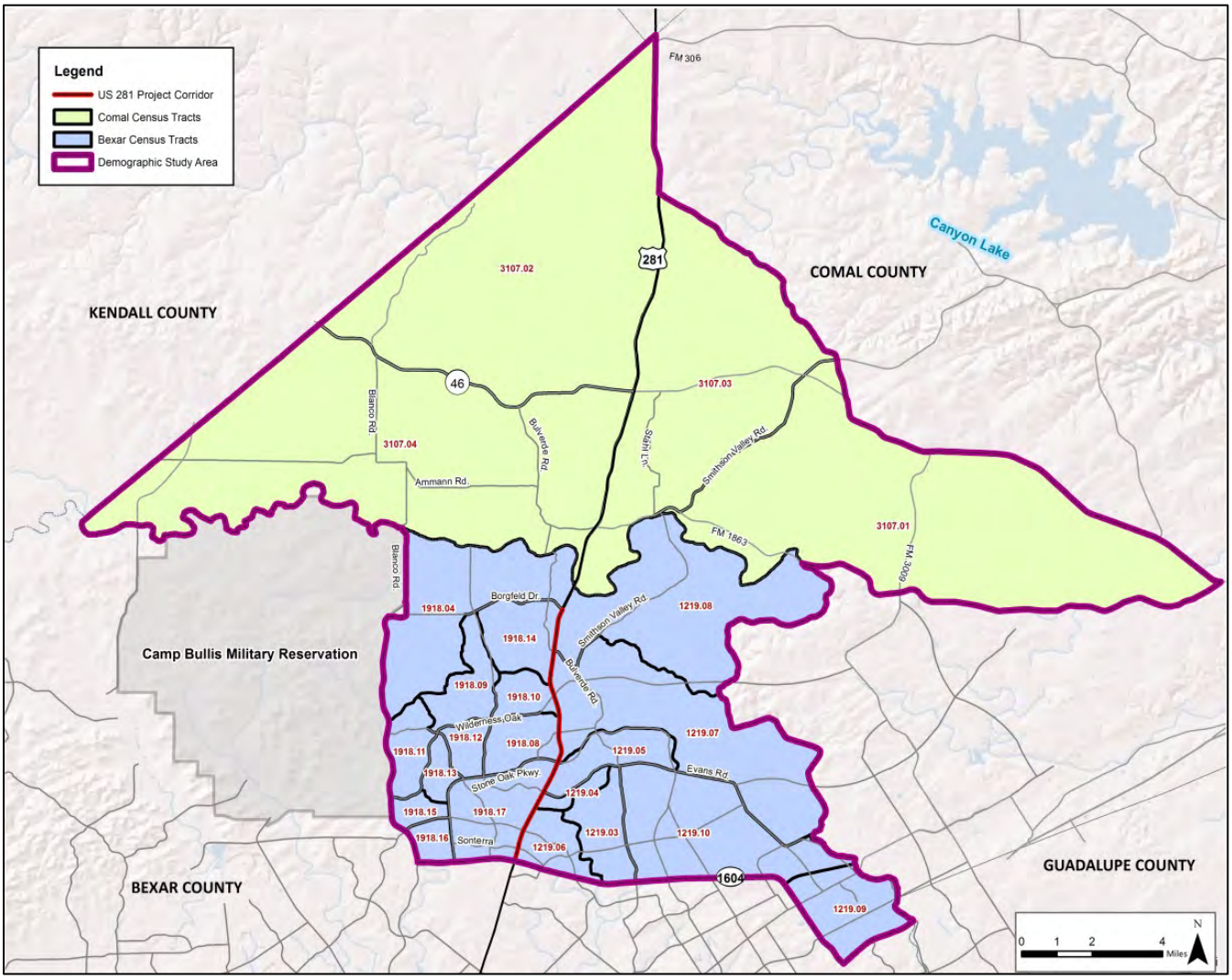
Population and Employment Growth

As land development has occurred, the number of people who live and work within the area has dramatically increased. **Figure 1-5** shows the demographic study area, which includes 23 Census Tracts that surround the US 281 project corridor north of Loop 1604 and within which the MPO provides population and employment forecasts for the year 2035. Historical and forecasted population, household and employment levels for this area are shown in **Figure 1-6** and summarized below:

- The number of people living within the northern Bexar County and southern Comal County Census Tracts adjacent to the US 281 project corridor has increased from 6,313 in 1980 to 120,212 in 2010, an increase of about 1,804 percent over the 30-year period (U.S. Census Bureau 1980 and 2010a).

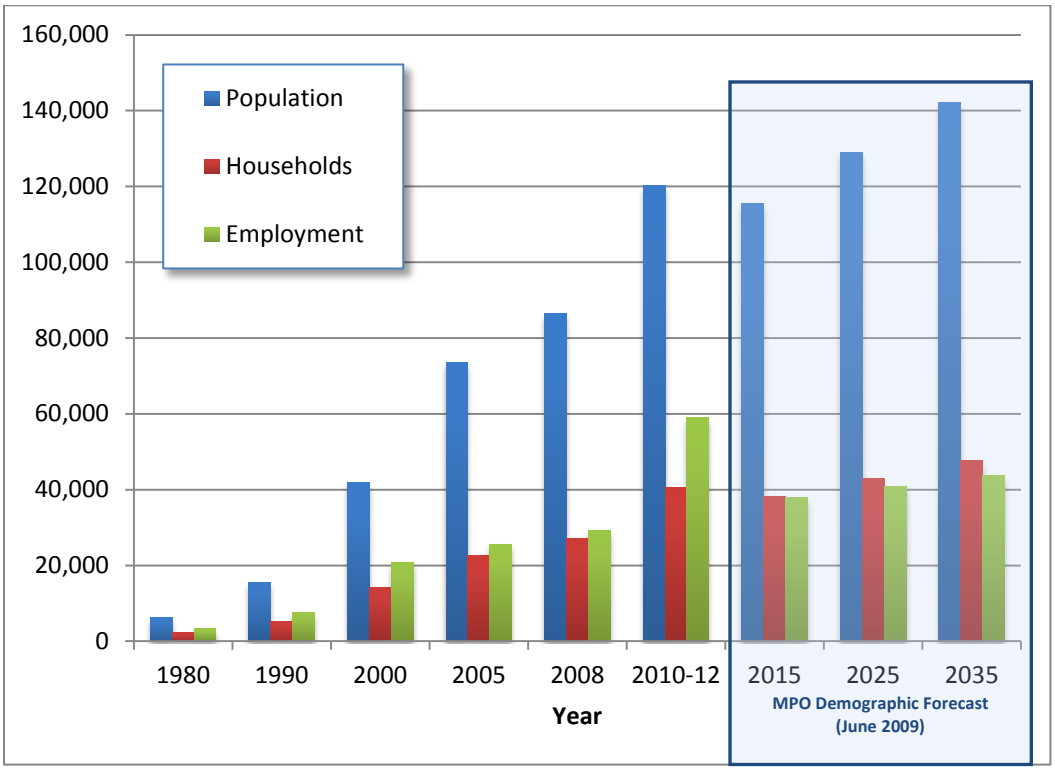
- According to the forecast developed by the MPO for *Mobility 2035*, the population of this area will reach 142,240 by 2035, an increase of about 18 percent from 2010.
- The number of households in this same area grew by more than 38,000 between 1980 and 2012 and is forecast to grow by about another 7,000 by 2035 (U.S. Census Bureau 1980 and 2012a; SA-BC MPO 2009a).
- The number of employees working in this area has also dramatically increased, from 3,312 in 1980 to 58,983 in 2012, an increase of about 1,681 percent (US Census Bureau 1980 and 2012g).
- The 2012 employment has already exceeded the forecasted 2035 employment by more than 15,000 employees (U.S. Census Bureau 2012h and SA-BC MPO 2009b).

Figure 1-5: Demographic study area



Source: U.S. Census Bureau, 2010b, US 281 EIS Team, 2011

Figure 1-6: Historical and forecasted population, household and employment levels within the US 281 demographic study area



Sources: U.S. Census Bureau 1980, 1990, 2000a, 2005a, 2005b, 2005c, 2010a, 2012a, 2012h; SA-BC MPO 2009b.

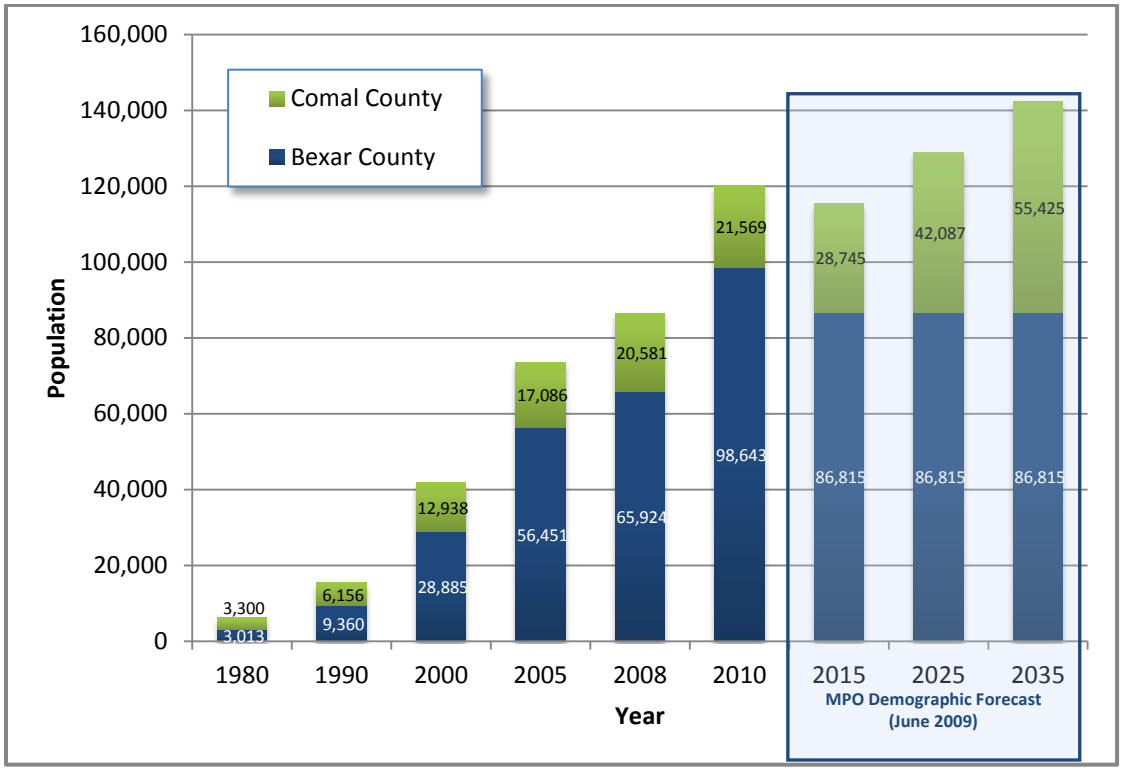
NOTE: 1980, 1990, and 2000 population, households and employment were sourced from the 1980, 1990 and 2000 decennial Census; 2005 and 2008 population, households and employment were sourced from 2005 and 2008 Census projections; 2010 population was sourced from the 2010 decennial Census; 2012 households and employment were sourced from the 2008-2012 American Community Survey; and 2015, 2025 and 2035 were sourced from the MPO Forecast, June 2009.

The population forecast shown in **Figure 1-7** assumes that the number of people living within the Bexar County portion of the demographic study area will remain unchanged after the year 2015 while the Comal County portion of the demographic study area will continue to grow through 2035. This is due to the socioeconomic land use scenario assumed for Bexar County in *Mobility 2035*. As part of *Mobility 2035*, the MPO collaborated with the Alamo Area Council of Governments (AACOG) in 2009 to develop three primary socioeconomic land use scenarios to guide population and employment forecasts for Bexar County. Each scenario maintained the same total amounts of future population, household and employment, but they differed in how future growth would be distributed. These three scenarios are as follows:

- *Current Trends Development Scenario (CTD)* – assumes that recent land use development trends will continue through 2035: the majority of new development occurs outside Interstate Highway (IH) 410 and outside Loop 1604; there will be minimal infill development or redevelopment within San Antonio's urban core.
- *Transit Oriented Development (TOD) Scenario* – assumes growth will occur along major transit corridors and focuses higher density, mixed use development within walking distance of transit stations.

- *Infill Development Scenario (IND)* – concentrates growth inside of Loop 1604 by increasing density through compact, mixed use development, in the urban core.

Figure 1-7: Population by county within the US 281 demographic study area



Sources: U.S. Census 1980, 1990, 2000a, 2005c, 2010a; SA-BC MPO 2009b.

The MPO Transportation Policy Board adopted a combination of the TOD and IND scenarios for use in *Mobility 2035*. The different socioeconomic land use scenarios for Bexar County have notably different population and employment projections in the US 281 demographic study area. The adopted TOD+IND scenario projects the future 2035 population to be 33 percent lower than the CTD scenario in the US 281 demographic study area, an estimation difference in future population of over 70,000 (US 281 EIS Team 2010). The TOD+IND scenario policy forecast is highly dependent on the ability of local agencies to regulate growth in the region. At present, regulatory tools for controlling where growth will occur in Bexar County are limited. Bexar County, like other county governments in Texas, does not have growth controls over development. Only incorporated cities and towns have the authority to control land use in Texas.

The MPO prepared their demographic forecasts for 2015, 2025 and 2035 using 2005 demographic data as the base year and prior to the availability of 2010 Census data. The 2010 population in the demographic study area (as reported by the US Census Bureau) is greater than the 2015 population projections and the 2012 employment is greater than the 2035 employment projection. The MPO has updated population, household and employment projections using more current demographic data for *Mobility 2040*; however, these data were not available at the time this analysis was conducted.

Traffic Growth

Population and employment growth within the area surrounding the US 281 project corridor have led to increased traffic volumes on US 281. **Table 1-1** shows historic and forecasted Average Daily Traffic (ADT) volumes on US 281 at the southern and northern ends of the US 281 project corridor. US 281 project corridor traffic volumes have grown substantially since 1990 when the last additional capacity was constructed on US 281 (between Bitters Road and Sonterra Boulevard, which includes the southern end of the US 281 project corridor). ADT is anticipated to increase substantially by 2035 according to the MPO's adopted TOD+IND land use scenario.

Table 1-1: Historic and Forecasted Average Daily Traffic

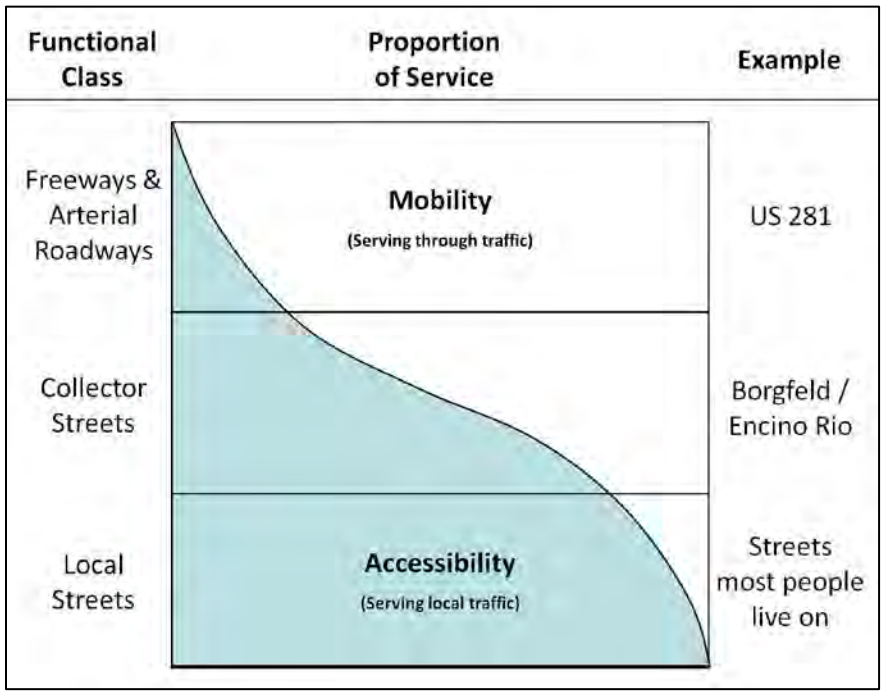
US 281 Location	Average Daily Traffic						
	1980	1990	2000	2012	Forecasted 2035 Demand	Compound Annual Growth Rate 1980 - 2012	Compound Annual Growth Rate 2012 - 2035
0.5 mile north of Borgfeld	5,300	12,000	28,000	32,000	140,000	5.78%	6.63%
0.3 mile north of Loop 1604	8,600	24,000	51,000	110,000	205,000	8.29%	2.74%

Source: TxDOT 2012a; SA-BC MPO 2009f, US 281 EIS Team, 2014

1.3.2 Functionality

Roadway functional classes designated by FHWA are based on the level of mobility and accessibility provided, as illustrated in **Figure 1-8**.

Figure 1-8: Roadway functional class



Source: FHWA, 1989

Freeways and arterial roadways are intended to serve the mobility needs of through-trips, whereas collector and local streets are designed for the accessibility needs of local traffic. TxDOT classifies the US 281 project corridor as an Urban Principal Arterial roadway from approximately Loop 1604 to Stone Oak Parkway, and a Rural Minor Arterial roadway from Stone Oak Parkway to Borgfeld Drive. As such, the US 281 project corridor has historically served an important role for vehicle trips entering or leaving the San Antonio urban area. For roadways like the US 281 project corridor, access to adjacent properties is typically subordinate to the needs of through-trips.

However, land development along the US 281 project corridor and the resulting growth in population and employment has placed greater demand on US 281 to provide more local access. Over the last several decades, this shift in the functional requirement for the US 281 project corridor has led to more and more intersecting driveways and cross-streets. As of 2012, US 281 from Loop 1604 to Borgfeld Drive has 7 signalized intersections, 19 intersections without signals, and approximately 114 driveways. This represents about 140 locations along the US 281 project corridor where vehicles are slowing down, stopping and turning.

Previous transportation improvements along the US 281 project corridor, listed in **Table 1-2**, show how the need for access has been primarily addressed by the addition of traffic signals. Capacity improvements—the addition of travel lanes to accommodate more traffic volume—have not been constructed for most of the US 281 project corridor since 1975, when US 281 was expanded from two lanes to four lanes from Loop 1604 to the Comal County line. The US 281 project corridor is becoming increasingly incapable of serving the needs of through-trips due to the high number of access points serving local trips. These competing purposes of US 281, combined with the lack of capacity improvements, have resulted in traffic congestion, especially during peak or rush hour travel times.

Table 1-2: History of US 281 Improvements

Section	Construction Activity	Year Completed
US 281 from Loop 1604 to Comal County line	Construction of 4 lane from 2 lane	1975
US 281 at Encino Rio Road	Installation of traffic signals	1986
US 281, from Bitters Road to 0.5 mile north of Loop 1604	Expansion to 6-lane expressway, including 3-level diamond interchange at Loop 1604	1990
US 281 at Bulverde Drive	Installation of flashing beacon	1998
US 281 at Borgfeld Drive	Installation of flashing beacon	1998
US 281 at Evans Road	Installation of traffic signals	1998
US 281 at Stone Oak Parkway	Installation of traffic signals	2002
US 281 at Bulverde Drive	Installation of traffic signals	2003
US 281 at Borgfeld Drive	Installation of traffic signals	2003
US 281 at Sonterra Boulevard	Construction of Interchange	2004
US 281 at Marshall Road	Installation of traffic signals	2006
US 281 at Overlook Parkway	Installation of traffic signals	2006
US 281 at Encino Rio Road, Evans Road, Stone Oak Parkway and Marshall Road	US 281 Super Street Improvements	2010
US 281/Loop 1604 Interchange	4 Direct Connectors (southern half)	2013

Source: Alamo RMA, 2013, TxDOT, 2012

Congestion

Increased travel demand, competing traffic movements, and the absence of capacity improvements have resulted in deteriorating traffic conditions. A 2014 travel time study (see **Appendix D1**) revealed that vehicles travelled the US 281 project corridor at an average speed of 22 miles per hour (mph) in the southbound direction during the morning rush hour and 30 mph in the northbound direction during the evening rush hour. These speeds represent an unstable flow of traffic which makes it challenging for motorists to switch between lanes. Rush hour traffic conditions in 2014 resulted in a 20-minute southbound trip during the morning peak hour and a 14-minute northbound trip during the evening peak hour. Rush hour trips in 2014 experienced congestion, with vehicles closely spaced within the traffic stream and virtually no useable gaps to maneuver.

A 2013 study conducted by TxDOT reported that US 281 from Loop 1604 to the Comal County line is the 28th (out of 100) most congested roadway segment in Texas. According to the study the US 281 corridor experienced over 252,330 annual hours of delay per mile in 2013 and incurred a cost of $ 14.58 million in lost time and wasted fuel as a result of congestion (TxDOT 2013). The US 281 Super Street improvements (completed in 2010) were intended to improve travel speeds; however, these improvements were not expected to provide lasting congestion relief. The purpose of the US 281 Super Street improvements was to enhance mobility and operational efficiency in the near-term.

1.3.3 Safety

There were over 5,500 crashes on US 281 between Loop 1604 and the Borgfeld Drive area during a ten-year period from 2003 through 2013 according to reports generated by the Texas Department of Public Safety (DPS). Fourteen of these crashes involved a fatality and 415 involved an injury. The annual number of crashes along the US 281 project corridor has increased over the ten-year period from 388 crashes in 2003 to 778 crashes in 2013. During this ten-year period, the US 281 project corridor reached its worst year for crashes in 2013 when 778 were recorded, including two fatal crashes. Of the 14 fatal crashes within the US 281 project corridor from 2003 to 2013, three occurred north of Marshall Road and 11 occurred at or south of Marshall Road. **Table 1-3** provides the crash data.

Table 1-3: US 281 Project Corridor Crashes, 2003 — 2013

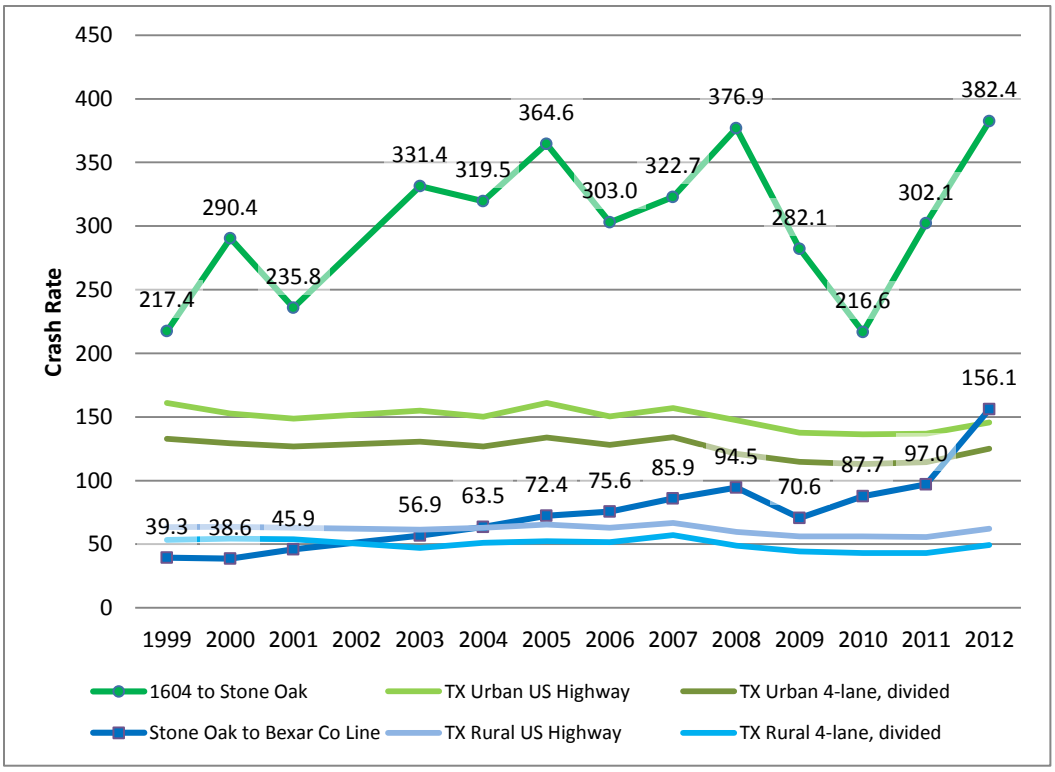
Year	Total Crashes	Crashes at Intersections	% Crashes at Intersections	Crashes In-Between Intersections	% Crashes In-Between Intersections	Crashes Involving Injury	Crashes Involving Fatality	Location of Fatal Accidents on US 281
2003	388	166	43%	222	57%	23	2	At Borgfeld Drive Intersection and Between Stone Oak Parkway & Marshall Road
2004	396	179	45%	217	55%	29	1	At US 281/Loop 1604 Interchange
2005	460	173	38%	287	62%	23	0	None
2006	449	170	38%	279	62%	28	2	Between Wilderness Oak & Overlook Parkway and at Marshall Road Intersection
2007	514	205	40%	309	60%	28	1	Between Stone Oak Parkway & Marshall Road
2008	545	254	47%	291	53%	24	2	At Evans Road Intersection and Between Overlook Parkway & Bulverde Road
2009	413	221	54%	192	46%	18	2	Between Redland Road & Encino Rio Road and Between Sonterra Boulevard & Redland Road
2010	447	208	47%	239	53%	44	2	Stone Oak Intersection and Encino Rio Intersection
2011	491	223	45%	268	55%	50	0	None
2012	666	252	38%	414	62%	60	0	None
2013	778	296	38%	482	62%	116	2	Between Redland Road & Encino Rio and Between Evans Road & Stone Oak Parkway
Total	5,545	2,345	42%	3,200	58%	415	14	11 at or south of Marshall Road, 3 north of Marshall Road

Source: TxDOT 2013b.

The crash rate, or number of crashes per 100 million Vehicle Miles Traveled (VMT), was compared with statewide average crash rates for similar facilities (US Highways and four-lane divided roadways). Along the more urban section of US 281 (Loop 1604 to Stone Oak Parkway), the annual crash rates from 2003 through 2012 were much higher than similar urban facilities in Texas. The crash rates of the more rural section of US 281, (Stone Oak Parkway to the vicinity of Borgfeld Drive) were also higher than comparable rural facilities in Texas and higher than comparable urban facilities in 2012. **Figure 1-9** provides the comparisons.

As previously mentioned, there are 140 places along the US 281 project corridor at which vehicles may be turning onto or off of US 281. During the period from 2003 through 2013 approximately 42 percent of all crashes occurred at intersections (**Table 1-3**), accounting for 2,345 crashes. While many factors contribute to vehicle crashes (such as bad weather, driver inattentiveness, driving while intoxicated), the location of crashes along this particular corridor suggests that numerous conflict points have contributed to the high number of crashes along the US 281 project corridor.

Figure 1-9: Crash rates on US 281 compared to Texas statewide crash rates



Source: TxDOT 2013b.

1.3.4 Community Quality of Life

The US 281 project corridor is a familiar place to a lot of people. Some live in one of the nearby neighborhoods, others work at one of the businesses, shop, dine, or attend school there. Many are regular commuters. US 281 is part of how they experience everyday life. Its qualities and characteristics can influence their health and overall well-being. Quality of life aspects were originally presented in the Notice of Intent (NOI) and have since been presented at every public meeting to allow for comments.

In addition to the congestion, travel delays, and safety concerns already discussed, four aspects of the US 281 project corridor tend to stand out when it comes to the quality of life for those residents and others who experience it on a personal level: excessive noise levels, an unappealing visual setting, and the lack of transportation choices. These aspects of the need for improvements to the US 281 project corridor, while perhaps less important to motorists who must contend daily with travel delays and safety, are nevertheless important considerations for the residential and business neighbors who live and work there.

The brief statements that follow are discussed in detail in **Chapter 3 Affected Environment and Environmental Consequences**.

Excessive Noise Levels

The growth in traffic volume on US 281 over the last several decades has led to increased noise levels along the US 281 project corridor. Neighbors along the US 281 project corridor have expressed their irritation over current traffic noise levels and their concern that the problem will get worse as traffic volumes continue to grow over the coming years (see **Section 3.8 Traffic Noise**).

Lack of Visual Appeal

Quality of life for residential and business communities along the US 281 project corridor is influenced by the visual quality of the highway travel experience. FHWA regulations recognize the relationship between highway corridor landscapes and how communities view the attractiveness of where they live and work. According to FHWA, "highway aesthetics is a most important consideration in the Federal-aid highway program. Highways must not only blend with our natural, social, and cultural environment, but also provide pleasure and satisfaction in their use" (23 Code of Federal Regulations [CFR] Part 752, Landscape and Roadside Development). Initiatives such as visual/aesthetic treatments aim to improve community livability by using transportation improvements as opportunities to create an environment that is tailored to the roadway's unique natural, social and cultural setting.

The US 281 project corridor does not currently contain improved landscaping or aesthetic treatments, nor is it tailored to its unique setting as a transition area between urbanized San Antonio and the rural Texas Hill Country. The proposed transportation improvements to US 281 present an opportunity to improve the livability of the neighboring communities around the US 281 project corridor via TxDOT, San Antonio District's *Urban Design Themes for Bexar and Outlying Counties – Guidelines for the Construction of Highways, Streets and Bridge* (TxDOT 2005). According to these guidelines, the US 281 Corridor Project falls within the *Hill Country Region*. The aesthetic elements of this theme consist of materials, designs and landscape enhancements that reflect the historical architecture of Hill Country towns (see **Section 3.20 Visual and Aesthetic Qualities**).

Worn vegetation along the roadway reveals that pedestrians are seeking safe places to walk along the US 281 project corridor.

Lack of Transportation Choices

The US 281 project corridor is underserved by public transportation and lacking in safe facilities for walking and biking. VIA Metropolitan Transit (VIA), San Antonio's public transportation provider, currently operates three bus routes that access the south end of the US 281 project corridor in the vicinity of the US 281 interchange with Loop 1604, providing express bus service to and from downtown San Antonio ("US-281 Express"), local bus service to and from downtown San Antonio via Blanco Road ("Blanco"), and local bus service between North Star Mall and North Central Baptist Hospital ("North Star/Stone Oak"). Other than these bus routes, no public transportation service is provided within the US 281 project corridor. New crosswalks and pedestrian signal heads were installed at Encino Rio, Evans Road, Stone Oak Parkway and Marshall Road as part of the US 281 Super Street improvements. No sidewalks or designated bike lanes are provided within the US 281 project corridor.

Photo of a roadway with wide shoulders for biking and adjacent sidewalk.

The lack of public transportation service and pedestrian and bicycle facilities means that residential and business communities along the US 281 project corridor must rely almost exclusively on private vehicular access. Safe alternative forms of access do not exist for those who either cannot have (mobility impaired) or prefer not to have (walking and biking enthusiasts) all of their trips begin and end in an automobile. The unmet need for alternative facilities is evident by the dirt foot paths that people have created (See **Section 3.5 Pedestrian and Bicycle Facilities**).

The importance of developing multi-modal approaches to solve San Antonio's mobility needs is reflected in the following excerpts from *Mobility 2035*:

- *"Public transportation benefits all persons who live, work, or travel in the service area, whether or not they use it. Public transportation plays an important role in the regional transportation system and hence, the regional economy. The additional automobile volume and congestion that the area would experience without transit, would cause an increase in on-road air emissions, resulting in deteriorated air quality for the entire region. Beyond these indirect benefits, public transportation provides a direct benefit to those who use it, by allowing an alternative to the cost and issues associated with driving, congestion, and parking for the 'choice riders' that have transportation options."*
- *"Alternative transportation systems can enrich the livability of a community and reduce congestion, improve mobility, as well as improve the overall quality of life for residents."*
- *"San Antonio and Bexar County recognize bicycling as a clean, healthy and affordable form of transportation and recreation. A comprehensive on-road and off-road bicycle network will make our community a place where bicycling will be desirable for trips of all kinds by all segments of the population."*

1.3.5 Summary of Needs for the US 281 Corridor Project

Over the last 30 years the number of people living and working within the northern Bexar County and southern Comal County area that surrounds the US 281 project corridor has grown considerably, creating a demand for peak hour travel capacity that to this day goes unmet. Previous attempts to make major improvements to US 281 between Loop 1604 and Borgfeld Drive have failed. The consequences of these failures can be seen in lengthy travel delays, higher than average vehicle crash rates, air pollution, excessive traffic noise, a visually unappealing landscape, and a transportation corridor without some of the most basic elements of mobility: public transportation and sidewalks. Without improvements to the US 281 project corridor the area's anticipated growth in population and employment over the next 25 years will lead to further declines in functionality, safety, and community quality of life.

1.4 PURPOSE OF THE PROPOSED ACTION

The purpose of the US 281 Corridor Project is to improve mobility and accessibility, enhance safety, and improve community quality of life. The project has logical termini and independent utility per FHWA regulations (23 CFR 771.111(f)). The following goals and objectives help to further define the purpose of the proposed action.

1.4.1 Project Goals and Objectives

Goals and objectives for the US 281 Corridor Project were derived from the evaluation of the problems and needs identified by previous studies, from public input during the

scoping process, and from meetings with the US 281 Community Advisory Committee (CAC) and the US 281 Peer Technical Review Committee (PTRC). (See **Chapter 6 Public and Agency Coordination** for more information about the CAC and PTRC.) The US 281 CAC is composed of representatives of residential, business and other stakeholders' organizations, including civic, community and environmental groups, education institutions and businesses located within San Antonio. The US 281 PTRC is composed of representatives from the agencies and local governments that have a role in funding, permitting, and/or planning/implementing proposed transportation improvements in Bexar County. The goals and objectives were established to help define the direction and character of the EIS and used as points of reference during the development and evaluation of potential alternatives to determine how well each potential alternative performed.

Address Growth

- satisfy travel demand
- be consistent with local and regional plans and policies
- develop facilities for multi-modal transportation
- allow for future high capacity transit

Improve Functionality

- reduce travel time and increase travel speeds
- reduce conflicts between local and through traffic
- improve access to adjacent property

Improve Safety

- reduce crash rates

Improve Quality of Life

- avoid/minimize adverse social & economic impacts
- avoid/minimize water quality impacts
- avoid/minimize impacts to wildlife habitat
- avoid/minimize air quality impacts
- minimize noise impacts
- maximize use of non-toll funds
- provide for aesthetics and landscaping
- provide facilities for walking & biking

1.5 DEVELOPMENT OF TRANSPORTATION PROJECTS

The planning process for any large transportation project begins at the regional level. Prior to beginning this EIS, regional transportation needs were identified through a long-range planning process involving local, regional, state, and federal transportation officials. The process was based on current needs, future growth, and available transportation funding. It resulted in the MTP for this region.

The MPO is responsible for regional transportation planning in the greater San Antonio area. Since the early 1970s metropolitan planning organizations have had the responsibility of developing and maintaining an MTP. The MTP is federally mandated; it serves to identify transportation needs and guides federal, state, and local

transportation expenditures. Improvements for US 281 between Loop 1604 and the Bexar/Comal County line have been included in the three most recent plans (**Table 1-4**).

Table 1-4: Inclusion of US 281 in MPO Metropolitan Transportation Plans

Metropolitan Transportation Plan	Date Plan was Adopted	Projects in MTP for the US 281 Corridor (Loop 1604 to Bexar/Comal County Line)
Mobility 2040	Adopted 12/08/2015	Loop 1604 to Stone Oak Parkway – expand to six lane expressway (four non-toll and two managed lanes) and non-toll northern connectors at Loop 1604
		Stone Oak Parkway to Bexar/Comal County Line – expand to four lane expressway (four managed lanes) - Interim
		Stone Oak Parkway to Bexar/Comal County Line – expand to six lane expressway (construct two additional managed lanes) – Ultimate
Mobility 2035	Adopted 12/07/2009 Updated 6/18/2014	Loop 1604 to Stone Oak Parkway – expand to six lane expressway (four non-toll and two managed lanes) and non-toll northern connectors at Loop 1604
		Stone Oak Parkway to Bexar/Comal County Line – expand to four lane expressway (four managed lanes) - Interim
		Stone Oak Parkway to Bexar/Comal County Line – expand to six lane expressway (construct two additional managed lanes) – Ultimate
Mobility 2030	Approved 12/06/2004 Updated 10/28/2005	0.4 mile north of Loop 1604 to 0.7 mile north of Stone Oak Parkway & 2.5 miles north of Loop 1604 to Bexar/Comal County Line – expand to six lane expressway with four lane frontage roads (toll six new main lanes)
		At Loop 1604 – expand interchange with tolled direct connectors

Source: AAMPO 2014b.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) strengthened the role of the MTP and made it the central mechanism for the decision-making process regarding transportation investments. The passage of the Transportation Equity Act for the 21st Century (TEA-21) in 1998 continued this emphasis. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law on August 10, 2005. SAFETEA-LU addresses the challenges on our transportation system such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment. Both SAFETEA-LU and the Clean Air Act Amendments of 1990 (CAAA) impose certain requirements on an urbanized area's long-range transportation plan. Transportation plans such as *Mobility 2040*, according to SAFETEA-LU metropolitan planning regulations, must be "fiscally constrained," that is, based on reasonable assumptions about future transportation funding levels.

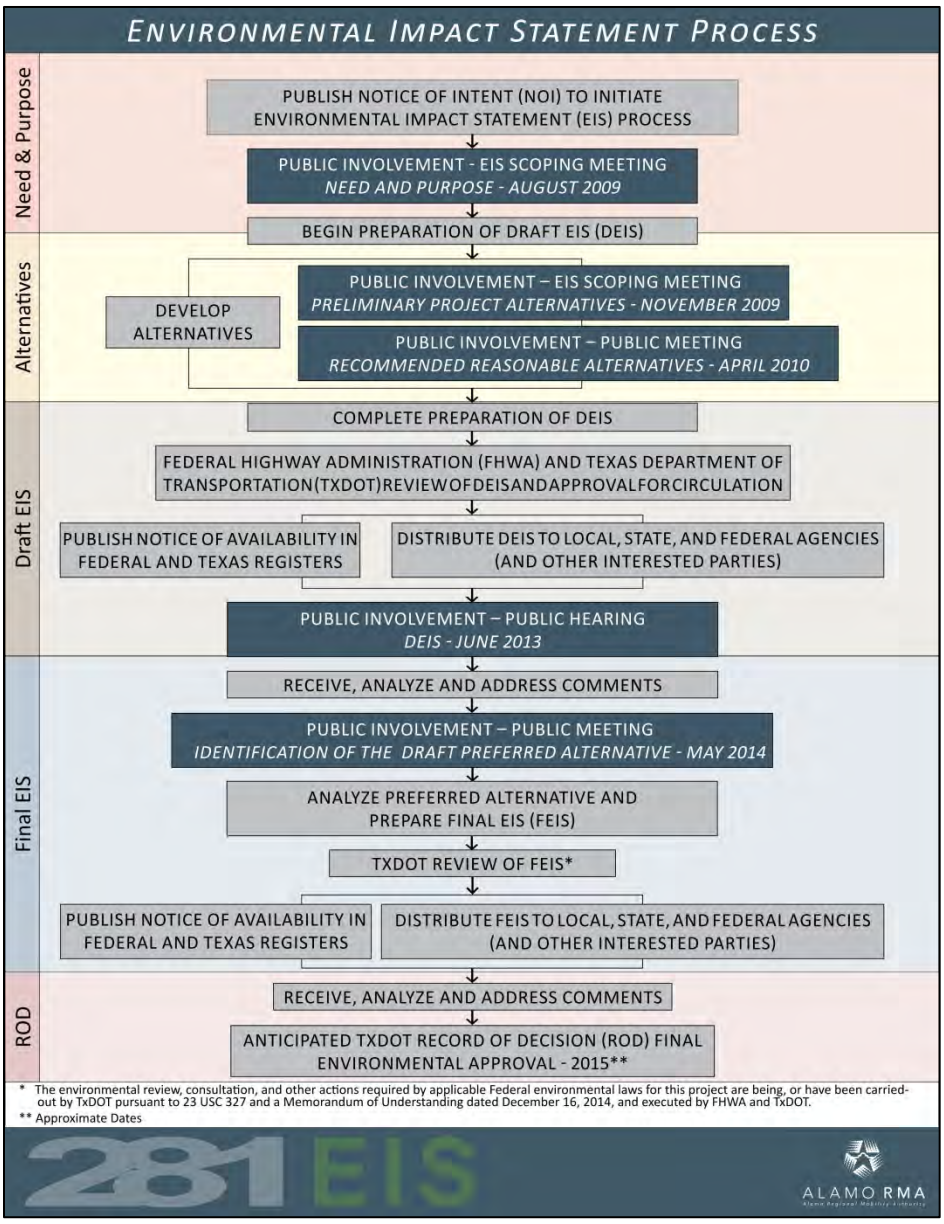
Improvements to US 281 between Loop 1604 and Borgfeld Drive have been a long-standing component of the region's transportation plans. The inclusion of US 281 Corridor Project in the past three MTPs indicates regional support. The City of San Antonio, Bexar County, VIA and TxDOT have demonstrated long-term support for the project by including US 281 improvements on all of these regional plans. The US 281 Corridor Project is programmed in *Mobility 2040* and the FY 2015-2018 TIP with a combination of managed lanes and non-toll general purpose lanes, and is part of a proposed regional system of toll and managed lanes that are planned in the San Antonio area (see **Appendix C**). The system of toll and managed lanes is expected to open between 2016 and 2030. Each proposed facility would have logical termini and independent utility. While not connected actions, in the context of the Council on

Environmental Quality NEPA regulations (40 CFR 1508.25), the proposed system of toll and managed lanes would be part of a transportation network serving the long-term transportation needs of the region. Because Environmental Justice (EJ) and other resource considerations should be taken into account when planning a system of independent toll and managed lane projects, a regional-level toll and managed lane analysis was conducted by the MPO to assess how such a system could indirectly or cumulatively affect EJ populations and other respective resources in the region (**Appendix F**) and a project-level EJ toll analysis was conducted for the US 281 Corridor Project (see **Section 3.4.6 Environmental Justice** and **Appendix E**).

1.5.1 The EIS Process

Figure 1-10 shows the steps involved in the EIS process. This Final EIS details the development and evaluation of alternatives, which occurred through a public and agency involvement process, and the identification of the Preferred Expressway Alternative. Environmental field investigations, traffic analysis, and costs were developed to compare the Build Alternatives with the No-Build Alternative and to evaluate the potential effects of the US 281 Corridor Project on the community and environment.

Figure 1-10: EIS flow chart



Source: US 281 EIS Team, 2015

The results of the environmental studies were documented in the Draft EIS and reviewed by federal and state agencies, decision-makers, and the public. The Draft EIS was designed to help decision-makers assess potential effects of each alternative. The Draft EIS presented the potential effects of the No-Build Alternative and the Build Alternatives. The Draft EIS did not identify a Preferred Alternative; however, one was identified through consultation among FHWA, TxDOT and Alamo RMA. On December 16, 2014, TxDOT assumed the responsibility of the environmental review, consultation, and other actions required by applicable Federal environmental law for this project, pursuant to 23 USC 327 and a Memorandum of Understanding executed by FHWA and TxDOT. As such, the Final EIS was submitted for approval by TxDOT and a Record of Decision (ROD) will be issued by TxDOT to complete the EIS process. Typically, the next phase of the project is to develop detailed construction plans, acquire the needed right-of-way, and then begin construction. Most large projects are constructed and open

to traffic in stages because of funding availability and the need to minimize traffic impacts during construction.

1.5.2 Role of the Draft EIS

The Notice of Intent (NOI) to prepare an EIS for US 281 from Loop 1604 to Borgfeld Drive was published in the Federal Register on July 8, 2009. A copy of the NOI is posted on the US 281 Corridor Project website at www.411on281.com/us281eis. This began the formal scoping process for the project in accordance with NEPA. This project conforms to the provisions of Section 6002 of the SAFETEA-LU (23 U.S. Code [USC] §139). The primary purpose of the Draft EIS was to assess the potential environmental effects of the No-Build and Build Alternatives. It also served as the primary document to facilitate review of the alternatives by federal, state, regional, and local agencies, decision-makers, and the public. The Draft EIS documented the anticipated social, economic, and environmental effects of the proposed project and provides definition for appropriate mitigation measures.

The Draft EIS presented two Build Alternatives, the Expressway Alternative and the Elevated Expressway Alternative, with three operational configurations: all lanes non-tolled, all lanes tolled, and all lanes managed. The April 22, 2013 update of *Mobility 2035* resulted in a fourth operational configuration for the US 281 Corridor Project that consisted of a combination of non-tolled and managed lanes. The fourth operational configuration was disclosed at the Public Hearing held on June 20, 2013. Comments received were reviewed by TxDOT and the Alamo RMA, resulting in the refined version of the Expressway Alternative (expressway with the combination operational configuration) being identified as the draft Preferred Alternative. On May 8, 2014, Public Meeting #4 was held to disclose and solicit public input on the draft Preferred Alternative. A re-evaluation of the combination operational configuration for the Expressway Alternative was conducted to confirm that the changes in the operational configuration did not have a significantly different effect on impacts than what was presented in the Draft EIS and would not change the recommendation of the draft Preferred Alternative.

In June 2014, per SAFETEA-LU, FHWA, TxDOT and the Alamo RMA consulted on the Preferred Alternative and concurred that the Expressway Alternative (consisting of a combination of non-tolled and managed lanes) be identified as the Preferred Alternative to be carried forward in the Final EIS (see **Appendix L1 Agency Correspondences**). The Preferred Expressway Alternative is included in and consistent with *Mobility 2035* (updated June 18, 2014), *Mobility 2040* (adopted December 8, 2014) and the FY 2015-2018 STIP, which was approved by FHWA on July 24, 2014.

1.5.3 Role of the Final EIS

The Final EIS includes a description of the Preferred Expressway Alternative that was recommended and documented based on the Draft EIS and public and agency comments. It analyzes the Preferred Expressway Alternative compared to the No-Build Alternative and the Build Alternatives analyzed in the Draft EIS, and describes the environmental impacts of the alternatives and the proposed mitigation measures for adverse impacts, and it provides responses to the Draft EIS Public Hearing comments and comments stemming from the May 2014 public meeting.

Following publication of this Final EIS, TxDOT, in agreement with the Alamo RMA as a Joint Lead Agency, will document the selection of an alternative in the Record of Decision (ROD) and respond to any potential comments received during the Final EIS wait period. TxDOT may select the Preferred Expressway Alternative, as described in this Final EIS, in the ROD. Alternatively, they may select any of the Build Alternatives analyzed in the Draft EIS, or the No-Build Alternative, in the ROD. If a Build Alternative is selected, the ROD will include the project commitments for mitigating adverse impacts and incorporating these measures into the project design. The ROD is anticipated to be issued by TxDOT by summer of 2015.

If a Build Alternative is selected in the ROD, the project would be eligible to proceed to implementation, including property acquisition. Depending on when the ROD is completed, project construction activities could begin as soon as 2016 under a design-build project delivery approach.

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